THE
ATMOSPHERIC RESERVOIR
Examining the Atmosphere and Atmospheric Resource Management

National Academy of Sciences reviewing status of weather modification

By Darin Langerud

Research in weather modification has waned over the last decade. While operational projects continue to spring up around the country and the world, the research community has not been able to keep pace due to a lack of funding. New hope sprung recently, however, as the National Academy of Sciences (NAS) has assembled a group of scientists who are experts in their field to review the status of weather modification. The NAS Committee on Future Directions in Weather Modification Research conducted its third meeting on the topic July 31 – August 2, 2002 in Woods Hole, MA. The committee is tasked to address four specific issues:

• Review the current state of the sciences of weather modification and the role of weather prediction as it applies to weather modification, paying particular attention to the technological and methodological developments of the last decade.

• Identify the critical uncertainties limiting advances in weather modification science and operations.

• Identify future directions in weather modification research and operations for improving the management of water resources and the reduction in severe weather hazards.

• Suggest actions to identify the potential impacts of localized weather modification on large-scale weather and climate patterns.

This most recent meeting was conducted to receive input from the research and operational community regarding weather modification science and technology. Information presented will assist the committee in structuring recommendations and formalizing an outline for its final report. Persons recently involved in cloud seeding research and operations were invited to present information to the committee on a variety of topics including cloud physics, computer modeling, seeding operations, program sponsorship, and weather modification research.

A number of excellent presentations captured the attention of the committee members over two and a half days and North Dakota was well represented at the proceedings.

Pat Sweeney, President of Fargo-based Weather Modification Incorporated, discussed the myriad weather modification operations and research programs the company is involved in not only in the United States, but in many countries around the world.

Darin Langerud, Director of the ND Atmospheric Resource Board, presented information on the North Dakota Cloud Modification Project, its involvement in past research, and its recommendations for the future.

Additional information was presented by a number of scientists from other states, universities, and federal research laboratories.

A primary focus of the meeting was the tremendous advances that have been made in remote sensing instrumentation over the last decade. Polarimetric radar now allows the user to differentiate liquid drops from ice crystals and hail in a thunderstorm. Small airborne radars can be used to track real-time horizontal and vertical air flow in clouds. Microwave radiometers are very good at detecting the location and amounts of the supercooled liquid water that is the primary target of glaciogenic (ice inducing) cloud seeding.

With better research technologies available now than ever before, the time is right to utilize these resources to improve our understanding of precipitation processes and how to better modify them to our advantage.

The committee recognizes the dearth of funding for weather modification research over the last decade. Plans are to hold one more meeting on the subject before putting pen to paper on the final report. Expectations are that the report and the committee's recommendations to Congress will be completed by spring 2003. Hopes are their recommendation will signal a new era in weather modification research. ■

Atmospheric Resource Board
North Dakota State Water Commission
900 East Boulevard, Bismarck, ND 58505
701) 328-2788
Internet: http://www.swc.state.nd.us/ARB/

ND Weather Modification Association
PO Box 2599, Bismarck, ND 58502
701) 223-4232